$$\begin{array}{c|c} & \text{COOM R} \\ & | \\ \text{CH} & \text{CH-COOM} \\ \\ \text{St-O-(CH}_2)_n - N \\ & \\ \text{R"} \end{array} \tag{II)}$$

$$R' R''$$
St-O-CH₂—CH-COOM (III)

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wherein:

St-O is a starch moiety,

R, which may be identical or different, are each chosen from a hydrogen atom and a methyl group,

R', which may be identical or different, are each chosen from a hydrogen atom, a methyl group, and a -COOH group,

n is chosen from integers ranging from 2 to 3,

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M, which may be identical or different, are each chosen from a hydrogen atom, an alkali metal, an alkaline-earth metal, NH_4 , quaternary ammonium compounds, and organic amines, and

R", which may be identical or different, are each chosen from a hydrogen atom, and alkyl groups comprising from 1 to 18 carbon atoms; and

- b) at least one cationic conditioner chosen from cationic silicones, quaternary ammonium salt surfactants, cyclopolymers of alkyldiallylamine, cyclopolymers of dialkyldiallylammonium, and polyquaternary ammonium polymers chosen from:
- (1) diquaternary ammonium polymers comprising repeating units of formula (IV):

$$\begin{array}{c|cccc}
R_{13} & R_{15} \\
 & | & | \\
 & --- N_{+} - A_{1} - N_{+} - B_{1} - -- \\
 & | & | & | & | \\
 & R_{14} & X_{-} & R_{16} & X_{-}
\end{array}$$
(IV)

wherein:

- R₁₃, R₁₄, R₁₅ and R₁₆, which may be identical or different, are each chosen from aliphatic groups comprising from 1 to 20 carbon atoms, alicyclic groups comprising from 1 to 20 carbon atoms, arylaliphatic groups comprising from 1 to 20 carbon atoms, lower hydroxyalkylaliphatic groups, and, additionally,

at least two of said R_{13} , R_{14} , R_{15} and R_{16} , with the nitrogen atoms to which they are attached, form at least one heterocycle optionally comprising an additional heteroatom other than nitrogen, and, additionally,

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R₁₃, R₁₄, R₁₅ and R₁₆, which may be identical or different, are each chosen from linear and branched C₁-C₆ alkyl groups substituted with at least one group chosen from nitrile groups, ester groups, acyl groups, amide groups and groups chosen from groups of formulae -CO-O-R₁₇-D and -CO-NH-R₁₇-D wherein R₁₇ is chosen from alkylene groups and D is chosen from quaternary ammonium groups; - A₁ and B₁, which may be identical or different, are each chosen from polymethylene groups comprising from 2 to 20 carbon atoms, chosen from linear and branched, saturated and unsaturated polymethylene groups wherein said polymethylene groups may optionally comprise, optionally linked to and optionally intercalated in the main chain, at least one entity chosen from aromatic rings, oxygen atoms, sulfur atoms, sulfoxide groups, sulfone groups, disulfide groups, amino groups, alkylamino groups, hydroxyl groups, quaternary ammonium groups, ureido groups, amide groups and ester groups;

- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- A_1 , R_{13} and R_{15} may optionally form, together with the two nitrogen cations to which they are attached, at least one piperazine ring;

with the proviso that if A_1 is chosen from linear and branched, saturated and unsaturated alkylene groups and linear and branched, saturated and unsaturated hydroxyalkylene groups, B_1 may also be chosen from groups of formula:

 $(CH_2)_n$ -CO-D-OC- $(CH_2)_n$ -

wherein D is chosen from:

a) glycol residues of formula: -O-Z-O-, wherein Z is chosen from linear and branched hydrocarbon groups and groups chosen from groups of formulae:

Cont

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-(CH₂-CH₂-O)_x-CH₂-CH₂-; and

-[CH₂-CH(CH₃)-O]_y-CH₂-CH(CH₃)- wherein x and y, which may be identical or different, are each chosen from integers ranging from 1 to 4 (in which case x and y represent a defined and unique degree of polymerization) and any number ranging from 1 to 4 (in which case x and y represent an average degree of polymerization);

- b) bis-secondary diamine residues;
- c) bis-primary diamine residues chosen from residues of formula:

 -NH-Y-NH-, wherein Y is chosen from linear and branched hydrocarbon groups and residues of formula -CH₂-CH₂-S-S-CH₂-CH₂-; and
 - d) ureylene groups of formula: -NH-CO-NH-; and
- (2) polyquaternary ammonium polymers comprising at least one unit of formula (VII):

$$\begin{array}{c} R_{18} \\ -N+-(CH_2)_r-NH-CO-(CH_2)_q\cdot CO-D-NH\cdot (CH_2)_s-N+-A-\\ R_{19} \\ \end{array} \\ \text{(VII)} \\ X_- \\ X_$$

wherein:

- R_{18} , R_{19} , R_{20} and R_{21} , which may be identical or different, are each chosen from a hydrogen atom, a methyl group, an ethyl group, a propyl group, a β-hydroxyethyl group, a β-hydroxypropyl group, and a -CH₂CH₂(OCH₂CH₂)_pOH group, wherein p is an integer ranging from 0 to 6;

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with the proviso that R_{18} , R_{19} , R_{20} and R_{21} are all not simultaneously hydrogen atoms;

- r and s, which may be identical or different, are each chosen from integers ranging from 1 to 6;
 - q is an integer ranging from 1 to 34;
 - X is chosen from anions of inorganic and organic acids,
 - D is chosen from direct bonds and -(CH₂)_t-CO- groups wherein t is 4 or 7; and
 - A is chosen from dihalide groups and a group of formula

-CH₂-CH₂-O-CH₂-CH₂-.

57. (Amended) A shampoo, a rinse-out conditioner, a leave-in conditioner, a hair permanent-waving composition, a hair straightening composition, a hair dyeing composition, a hair bleaching composition, a rinse-out composition to be applied between steps of a permanent-waving operation, a rinse-out composition to be applied between steps of a hair-straightening operation, comprising, in a cosmetically acceptable medium:

a) at least one amphoteric starch chosen from the compounds of formulae (I) to (IV):

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$$\begin{array}{c|c} R' & R \\ \hline CH-CH-COOM \\ St-O-(CH_2)_n-N \\ \hline CH-CH-COOM \\ \hline R' & R \end{array} \hspace{0.5cm} (I)$$

$$\begin{array}{c|c} & COOM & R \\ & & | \\ & CH - CH - COOM \\ \\ St - O - (CH_2)_n - N \\ & R'' \end{array} \tag{II}$$

wherein:

St-O is a starch moiety,

R, which may be identical or different, are each chosen from a hydrogen atom and a methyl group,

R', which may be identical or different, are each chosen from a hydrogen atom, a methyl group, and a -COOH group,

n is chosen from integers ranging from 2 to 3,

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M, which may be identical or different, are each chosen from a hydrogen atom, an alkali metal, an alkaline-earth metal, NH_4 , quaternary ammonium compounds, and organic amines, and

R", which may be identical or different, are each chosen from a hydrogen atom, and alkyl groups comprising from 1 to 18 carbon atoms; and

- b) at least one cationic conditioner chosen from cationic silicones, quaternary ammonium salt surfactants, cyclopolymers of alkyldiallylamine, cyclopolymers of dialkyldiallylammonium, and polyquaternary ammonium polymers chosen from:
- (1) diquaternary ammonium polymers comprising repeating units of formula (IV):

$$\begin{array}{c|cccc}
R_{13} & R_{15} \\
 & | & | \\
 & N+-A_1-N+-B_1 & \\
 & | & X- & | & X-\\
 & R_{14} & X- & R_{16} & X-
\end{array}$$
(IV)

wherein:

- R₁₃, R₁₄, R₁₅ and R₁₆, which may be identical or different, are each chosen from aliphatic groups comprising from 1 to 20 carbon atoms, alicyclic groups comprising from 1 to 20 carbon atoms, arylaliphatic groups comprising from 1 to 20 carbon atoms, lower hydroxyalkylaliphatic groups, and, additionally,

at least two of said R_{13} , R_{14} , R_{15} and R_{16} , with the nitrogen atoms to which they are attached, form at least one heterocycle optionally comprising an additional heteroatom.org/ other than nitrogen, and, additionally,

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 R_{13} , R_{14} , R_{15} and R_{16} , which may be identical or different, are each chosen from linear and branched C_1 - C_6 alkyl groups substituted with at least one group chosen from nitrile groups, ester groups, acyl groups, amide groups and groups chosen from groups of formulae -CO-O- R_{17} -D and -CO-NH- R_{17} -D wherein R_{17} is chosen from alkylene groups and D is chosen from quaternary ammonium groups;

- A₁ and B₁, which may be identical or different, are each chosen from polymethylene groups comprising from 2 to 20 carbon atoms, chosen from linear and branched, saturated and unsaturated polymethylene groups wherein said polymethylene groups may optionally comprise, optionally linked to and optionally intercalated in the main chain, at least one entity chosen from aromatic rings, oxygen atoms, sulfur atoms, sulfoxide groups, sulfone groups, disulfide groups, amino groups, alkylamino groups, hydroxyl groups, quaternary ammonium groups, ureido groups, amide groups and ester groups;
- X is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- A_1 , R_{13} and R_{15} may optionally form, together with the two nitrogen cations to which they are attached, at least one piperazine ring;

with the proviso that if A_1 is chosen from linear and branched, saturated and unsaturated alkylene groups and linear and branched, saturated and unsaturated hydroxyalkylene groups, B_1 may also be chosen from groups of formula:

 $(CH_2)_n$ -CO-D-OC- $(CH_2)_n$ -

wherein D is chosen from:

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a) glycol residues of formula: -O-Z-O-, wherein Z is chosen from linear and branched hydrocarbon groups and groups chosen from groups of formulae:

$$-(CH_2\text{-}CH_2\text{-}O)_x\text{-}CH_2\text{-}CH_2\text{-}; \text{ and}$$

$$-[CH_2\text{-}CH(CH_3)\text{-}O]_v\text{-}CH_2\text{-}CH(CH_3)\text{-}$$

wherein x and y, which may be identical or different, are each chosen from integers ranging from 1 to 4 (in which case x and y represent a defined and unique degree of polymerization) and any number ranging from 1 to 4 (in which case x and y represent an average degree of polymerization);

- b) bis-secondary diamine residues;
- c) bis-primary diamine residues chosen from residues of formula:

 -NH-Y-NH-, wherein Y is chosen from linear and branched hydrocarbon groups and residues of formula -CH₂-CH₂-S-S-CH₂-CH₂-; and
 - d) ureylene groups of formula: -NH-CO-NH-; and
- (2) polyquaternary ammonium polymers comprising at least one unit of formula (VII):

$$\begin{array}{c} R_{18} \\ -N+-(CH_2)_{f}-NH-CO-(CH_2)_{q}\cdot CO-D-NH\cdot (CH_2)_{s}-N+-A-\\ R_{19} \\ \end{array} \tag{VII)} \qquad \qquad X_{-} \\ X_{$$

wherein:

- R_{18} , R_{19} , R_{20} and R_{21} , which may be identical or different, are each chosen from a hydrogen atom, a methyl group, an ethyl group, a propyl group, a β -hydroxyethyl



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group, a β -hydroxypropyl group, and a -CH₂CH₂(OCH₂CH₂)_pOH group, wherein p is an integer ranging from 0 to 6;

with the proviso that R_{18} , R_{19} , R_{20} and R_{21} are all not simultaneously hydrogen atoms;

- r and s, which may be identical or different, are each chosen from integers ranging from 1 to 6;
 - q is an integer ranging from 1 to 34;
 - X⁻ is chosen from anions of inorganic and organic acids,
 - D is chosen from direct bonds and -(CH₂)_t-CO- groups wherein t is 4 or 7; and
- A is chosen from dihalide groups and a group of formula -CH₂-CH₂-O-CH₂-CH₂-.
- 58. (Amended) A shower gel, a bubble bath or a make-up-removing product comprising, in a cosmetically acceptable medium:
- a) at least one amphoteric starch chosen from the compounds of formulae (I) to (IV):

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$$COOM R$$
 $CH \longrightarrow CH - COOM$
 $St - O - (CH2)n - N$
 R''
(II)

$$R' R''$$

St-O-CH₂—CH-COOM (III)

$$R' R''$$
 N

$$St-O-CH-CH_2-COOM$$
(IV)

wherein:

St-O is a starch moiety,

R, which may be identical or different, are each chosen from a hydrogen atom and a methyl group,

R', which may be identical or different, are each chosen from a hydrogen atom, a methyl group, and a -COOH group,

n is chosen from integers ranging from 2 to 3,

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M, which may be identical or different, are each chosen from a hydrogen atom, an alkali metal, an alkaline-earth metal, NH_4 , quaternary ammonium compounds, and organic amines, and

R", which may be identical or different, are each chosen from a hydrogen atom, and alkyl groups comprising from 1 to 18 carbon atoms; and

- b) at least one cationic conditioner chosen from cationic silicones, quaternary ammonium salt surfactants, cyclopolymers of alkyldiallylamine, cyclopolymers of dialkyldiallylammonium, and polyquaternary ammonium polymers chosen from:
- (1) diquaternary ammonium polymers comprising repeating units of formula (IV):

wherein:

- R₁₃, R₁₄, R₁₅ and R₁₆, which may be identical or different, are each chosen from aliphatic groups comprising from 1 to 20 carbon atoms, alicyclic groups comprising from 1 to 20 carbon atoms, arylaliphatic groups comprising from 1 to 20 carbon atoms, lower hydroxyalkylaliphatic groups, and, additionally,

at least two of said R_{13} , R_{14} , R_{15} and R_{16} , with the nitrogen atoms to which they are attached, form at least one heterocycle optionally comprising an additional heteroatom other than nitrogen, and, additionally,

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 R_{13} , R_{14} , R_{15} and R_{16} , which may be identical or different, are each chosen from linear and branched C_1 - C_6 alkyl groups substituted with at least one group chosen from nitrile groups, ester groups, acyl groups, amide groups and groups chosen from groups of formulae -CO-O- R_{17} -D and -CO-NH- R_{17} -D wherein R_{17} is chosen from alkylene groups and D is chosen from quaternary ammonium groups;

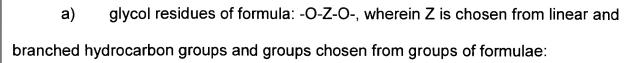
- A₁ and B₁, which may be identical or different, are each chosen from polymethylene groups comprising from 2 to 20 carbon atoms, chosen from linear and branched, saturated and unsaturated polymethylene groups wherein said polymethylene groups may optionally comprise, optionally linked to and optionally intercalated in the main chain, at least one entity chosen from aromatic rings, oxygen atoms, sulfur atoms, sulfoxide groups, sulfone groups, disulfide groups, amino groups, alkylamino groups, hydroxyl groups, quaternary ammonium groups, ureido groups, amide groups and ester groups;
- X⁻ is an anion chosen from anions derived from inorganic acids and anions derived from organic acids; and
- A_1 , R_{13} and R_{15} may optionally form, together with the two nitrogen cations to which they are attached, at least one piperazine ring;

with the proviso that if A_1 is chosen from linear and branched, saturated and unsaturated alkylene groups and linear and branched, saturated and unsaturated hydroxyalkylene groups, B_1 may also be chosen from groups of formula:

 $(CH_2)_n$ -CO-D-OC- $(CH_2)_n$ -

wherein D is chosen from:

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-
$$(CH_2-CH_2-O)_x-CH_2-CH_2-$$
; and

-
$$[CH_2$$
- $CH(CH_3)$ - $O]_y$ - CH_2 - $CH(CH_3)$ -

wherein x and y, which may be identical or different, are each chosen from integers ranging from 1 to 4 (in which case x and y represent a defined and unique degree of polymerization) and any number ranging from 1 to 4 (in which case x and y represent an average degree of polymerization);

- b) bis-secondary diamine residues;
- c) bis-primary diamine residues chosen from residues of formula:

 -NH-Y-NH-, wherein Y is chosen from linear and branched hydrocarbon groups and residues of formula -CH₂-CH₂-S-S-CH₂-CH₂-; and
 - d) ureylene groups of formula: -NH-CO-NH-; and
- (2) polyquaternary ammonium polymers comprising at least one unit of formula (VII):

$$\begin{array}{c} R_{18} \\ - R_{19} \\ X_{-1} \\ R_{19} \end{array} (VII) \\ \begin{array}{c} R_{20} \\ - R_{21} \\ - R_{21} \\ - R_{21} \end{array}$$

wherein:

- R₁₈, R₁₉, R₂₀ and R₂₁, which may be identical or different, are each chosen from a hydrogen atom, a methyl group, an ethyl group, a propyl group, a β-hydroxyethyl



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group, a β -hydroxypropyl group, and a -CH₂CH₂(OCH₂CH₂)_pOH group, wherein p is an integer ranging from 0 to 6;

with the proviso that R_{18} , R_{19} , R_{20} and R_{21} are all not simultaneously hydrogen atoms;

- r and s, which may be identical or different, are each chosen from integers ranging from 1 to 6;
 - q is an integer ranging from 1 to 34;
 - X is chosen from anions of inorganic and organic acids,
 - D is chosen from direct bonds and -(CH₂)_t-CO- groups wherein t is 4 or 7; and
- A is chosen from dihalide groups and a group of formula -CH₂-CH₂-O-CH₂-CH₂-.

Please add the following claims:

- 67. The cosmetic composition of claim 1 wherein said bis-secondary diamine residues are chosen from piperazine derivatives.
- 68. The shampoo, rinse-out conditioner, leave-in conditioner, hair permanent-waving composition, hair straightening composition, hair dyeing composition, hair bleaching composition, rinse-out composition to be applied between steps of a permanent-waving operation, rinse-out composition to be applied between steps of a hair-straightening operation of claim 57, wherein said bis-secondary diamine residues are chosen from piperazine derivatives.
- 69. The shower gel, bubble bath or make-up-removing product of claim 58, wherein said bis-secondary diamine residues are chosen from piperazine derivatives.

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